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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,188	11/26/2001	Nasreen Gazala Chopra	10010188-1	8737

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AGILENT TECHNOLOGIES, INC  
Legal Department, DL429  
Intellectual Property Administration  
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Loveland, CO 80537-0599

EXAMINER

KIKNADZE, IRAKLI

ART UNIT PAPER NUMBER

2882

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/994,188

Applicant(s)

CHOPRA ET AL.

Examiner

Irakli Kiknadze

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 06 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,5,13-16,18-20 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 5 and 35-37 is/are allowed.
- 6) ☒ Claim(s) 2 and 13-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Spergel et al. (US Patent 3,418,474).

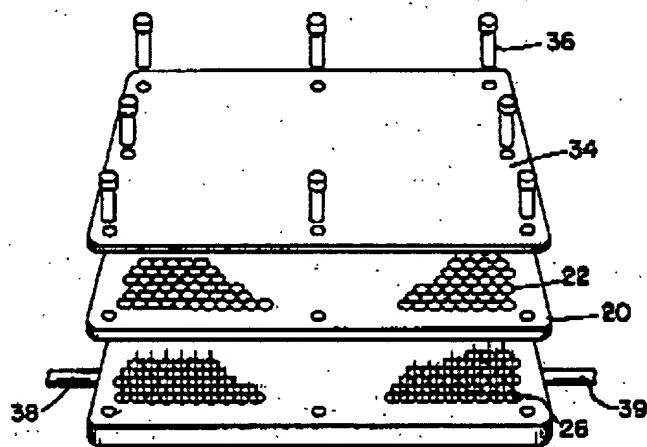
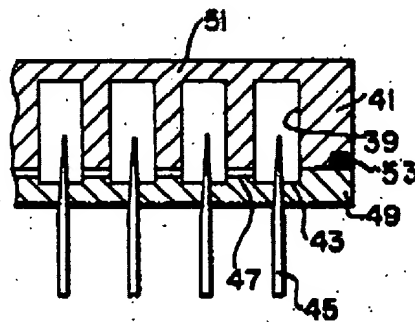


FIG. 1

With respect to claim 2, Spergel teaches an imaging system (Figs. 1-4) comprising: a substrate (24); and a gas detector formed on the substrate (24) comprising a first detection circuit corresponding to a first chamber and a second detection circuit corresponding to a second chamber, the first detection circuit provides

a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber, the second detection circuit provides a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the first portion of x-rays being different than the second portion of x-rays (see abstract of the disclosure; column 1, lines 14-21), and wherein an x-ray stopping component (a medial plate (20) having therethrough a plurality of openings (22) and made from a heavy metal such as lead) is arranged between the first and second chambers, the x-ray stopping component operative to absorb off-axis photons (column 2, lines 38-70; column 3, lines 15-30 and 55-75; column 4, lines 14-30). The alternative detector arrangement is shown in Fig.3, comprising the substrate (49), and individual chambers defined by the apertures (39) drilled partially through a plate (41) and the seats (43). A suitable static or flowed gas for the chambers is provided in the substrate (49) through the communicating ports (47).



**FIG. 3**

With respect to claim 15, Spergel

teaches method for imaging comprising: providing a substrate (49); forming on the substrate (49) a first chamber, a second chamber, and an x-ray stopping component (20) between the first chamber and the second chambers; generating a first signal

indicative of an intensity of a first portion of x-rays radiating into the first chamber, the first signal corresponding to at least a first pixel, and generating a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber, the second signal corresponding to at least a second pixel, wherein the first portion of x-rays is different than the second portion of x-rays (column 2, lines 38-70; column 3, lines 15-30 and 55-75; column 4, lines 14-30).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 13, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claims 2 and 15 above, and further in view of McDaniel (US Patent 4,780,897).

With respect to claim Spergel teaches the claimed invention except for means for changing a pressure of the volume of gas and means for exchanging the gas from one gas to different gas. McDaniel teaches an X-ray detector using two different gases (ion sources) at different pressures, wherein the tapes of gasses (e.g. Krypton and Xenon) and the pressures could optimally be selected to pass higher energy X-rays an/or to allow interact with lower energy X-rays for producing desirable X-

ray image (column 12, lines 15-26). It would have been obvious to one ordinary skill in art at the time invention was made to provide means for changing the operating characteristics of the gas in the detector as suggested McDaniel in the X-ray imaging system of Spergel to optimize the imaging capabilities of the system.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claim 15 above, and further in view of Siedband (US Patent 5,308,988).

With respect to claim 16, Spergel teaches the claimed invention except for rendering the first pixel based on the first signal and rendering the second pixel based on the second signal. Siedband teaches a method for x-ray imaging using a radiation detector with the ionization chambers comprising generating the signals indicative of x-ray radiation intensity for each pixel, one at a time. Further, a computer (46) computes data and displays on a screen (49) (column 4, lines 32-48). In the medical application for displaying an image, it is known to associate particular signal values with particular colors and opacities (known as visualization parameters) to assist visualization. This process comprises computing a 2D data set (pixel data set) representing a 2D projection of the data set for display on a computer screen or other conventional 2D display apparatus. This process is known as rendering. It would have been obvious to one ordinary skill in art at the time invention was made to employ the pixel data processing and displaying (rendering) as suggested by Siedband in the X-ray imaging system of Spergel, since such modification would provide enhanced visual interpretation of the image.

6. Claims 19 and 20, are rejected under 35 U.S.C. 103(a) as being unpatentable over Spergel et al. (US Patent 3,418,474) as applied to claim 15 above, and further in view of in view of Little et al (US Patent 5,119,408).

With respect to claims 19 and 20, Spergel teaches the claimed invention except for providing an object and moving the object relative to the volume of the gas while the object is being irradiated. Little teaches a method (Figs. 3A-3B) for inspecting an object (10) moving relative to a Xenon gas detector (28) (column 3, line 46-55; column 5, lines 1-16) to obtain dynamic X-ray images corresponding to the object. It would have been obvious to one ordinary skill in art at the time invention was made to move the object relative to the gas detector as suggested by Little in the imaging method of Spergel, since such modification would provide dynamic X-ray images corresponding to the object of interest for enhanced visual interpretation of the image.

***Allowable Subject Matter***

7. Claims 5 and 35-37 are allowed.

8. With respect to claims 5 and 35-37 prior art fails to teach or make obvious an imaging system and a pixilated gas detector comprising a first and a second gas reservoir pneumatically communicating with the a first chamber such that gas from either the first or the second gas reservoir can be selectively provided to the first chamber as claimed in combination with all elements of claims 5 and 35. Claims 36 and 37 are allowed by virtue of their dependence.

***Response to Arguments***

9. Applicant's arguments filed 7/19/2005 have been fully considered but they are not persuasive.

With respect to claims 2, 15, 19 and 20 Spergel teaches a substrate as an electrically non-conductive plastic plate (24) (column 2, lines 38-54).

With respect to claims 13 and 14, Spergel teaches the claimed invention except for means for changing a pressure of the volume of gas and means for exchanging the gas from one gas to different gas. McDaniel teaches an X-ray detector using two different gases (ion sources) at different pressures, wherein the tapes of gasses (e.g. Krypton and Xenon) and the pressures could optimally be selected to pass higher energy X-rays an/or to allow interact with lower energy X-rays for producing desirable X-ray image (column 12, lines 15-26). One ordinary skill in art at the time invention was made would be motivated using means for changing the operating characteristics of the gas in the detector (adjusting gas pressure and/or using different gas) to accommodate specific application as suggested McDaniel in the X-ray imaging system of Spergel to optimize the imaging capabilities of the system. Further, it has been held that that wherein the general conditions of a claim have been discovered in the prior art, discovering the optimum or working ranges (in instant case providing means for adjusting the optimum gas pressure or chemical composition for most favorable imaging) would involve only routine skill in art.



**Conclusion**

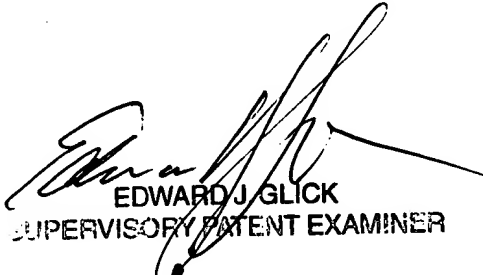
10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irakli Kiknadze whose telephone number is 571-272-2493. The examiner can normally be reached on 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on 571-272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Irakli Kiknadze  
September 21, 2005

*IK*

  
EDWARD J. GLICK  
SUPERVISORY PATENT EXAMINER